

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark  
Office  
(Box PCT)  
Crystal Plaza 2  
Washington, DC 20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 20 February 1998 (20.02.98)	<b>Applicant's or agent's file reference</b> T/96209 WO
<b>International application No.</b> PCT/EP97/03712	<b>Priority date</b> (day/month/year) 11 July 1996 (11.07.96)
<b>International filing date</b> (day/month/year) 08 July 1997 (08.07.97)	
<b>Applicant</b> FIGDOR, Carl, Gustav et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
30 January 1998 (30.01.98)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland	<b>Authorized officer</b> S. De Michiel
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

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NOTIFICATION CONCERNING  
DOCUMENT TRANSMITTED

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark  
Office  
(Box PCT)  
Crystal Plaza 2  
Washington, DC 20231  
ETATS-UNIS D'AMERIQUE

in its capacity as designated Office

Date of mailing (day/month/year)

15 September 1998 (15.09.98)

International application No.

PCT/EP97/03712

International filing date (day/month/year)

08 July 1997 (08.07.97)

Applicant

AKZO NOBEL N.V. et al

The International Bureau transmits herewith the following documents and number thereof:

\_\_\_\_\_ cop(ies) of priority document(s) (Rule 17.2(a))

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

S. De Michiel

Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

RENES, Johan  
Vereenigde Octrooibureaux  
Nieuwe Parklaan 97  
P.O. Box 87930  
NL-2508 DH Den Haag  
PAYS-BASDate of mailing (day/month/year)  
05 January 1999 (05.01.99)Applicant's or agent's file reference  
T/96209 WO

## IMPORTANT NOTIFICATION

International application No.  
PCT/EP97/03712International filing date (day/month/year)  
08 July 1997 (08.07.97)

## 1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

## Name and Address

AKZO NOBEL N.V.  
Velperweg 76  
NL-6824 BM Arnhem  
Netherlands

## State of Nationality

NL

## State of Residence

NL

Telephone No.

Facsimile No.

Teleprinter No.

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☒ the name ☒ the address ☐ the nationality ☐ the residence

## Name and Address

INTROGENE B.V.  
Wassenaarseweg 72  
NL-2301 CA Leiden  
Netherlands

## State of Nationality

NL

## State of Residence

NL

Telephone No.

Facsimile No.

Teleprinter No.

## 3. Further observations, if necessary:

**Please also note the change of agent, as indicated at the top of this form.**

## 4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned  
☐ the International Searching Authority ☒ the elected Offices concerned  
☐ the International Preliminary Examining Authority ☐ other:The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

S. De Michiel

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU

To:

VAN GENT, Marieke  
P.O. Box 20  
NL-5340 BH Oss  
PAYS-BAS

Date of mailing (day/month/year) 15 September 1998 (15.09.98)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference T/96209 WO	
International application No. PCT/EP97/03712	
International publication date (day/month/year) 22 January 1998 (22.01.98)	
International filing date (day/month/year) 08 July 1997 (08.07.97)	Priority date (day/month/year) 11 July 1996 (11.07.96)
Applicant AKZO NOBEL N.V. et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An **asterisk(\*)** appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The **letters "NR"** appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
11 July 1996 (11.07.96)	96201945.1	EP	08 July 1997 (08.07.97)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer S. De Michiel Telephone No. (41-22) 338.83.38
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REC'D 26 OCT 1998

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT


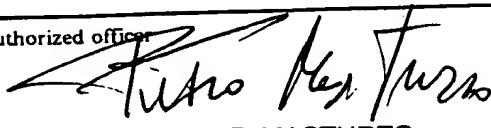
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>T/96209 WO</b>	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. <b>PCT/EP 97/ 03712</b>	International filing date (day/month/year) <b>08/07/1997</b>	Priority date (day/month/year) <b>11/07/1996</b>
International Patent Classification (IPC) or national classification and IPC <b>C12N15/11</b>		
Applicant <b>AKZO NOBEL N.V. et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consists of a total of \_\_\_\_\_ sheets.

3. This report contains indications and corresponding pages relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand <b>30/01/1998</b>	Date of completion of this report <b>23. 10. 98</b>
Name and mailing address of the IPEA/  European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Netherlands Tel.: (+31-70) 340-2040, Tx. 31 651 epo nl Fax: (+31-70) 340-3016	Authorized officer  <b>P. MASTIURZO</b> Telephone No.

## I. Basis of the report

1. This report has been drawn up on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*

☒ the international application as originally filed

☐ the description, pages  
pages  
pages

, as originally filed  
, filed with the demand  
, filed with the letter of

☐ the claims, Nos.  
Nos.  
Nos.  
Nos.

, as originally filed  
, as amended under Article 19  
, filed with the demand  
, filed with the letter of

☐ the drawings, -sheets / fig.  
sheets / fig.  
sheets / fig.

, as originally filed  
, filed with the demand  
, filed with the letter of

2. The amendments have resulted in the cancellation of:

☐ the description, pages:  
☐ the claims, Nos.  
☐ the drawings, sheets / fig.

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2 (c)).

4. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty	Claims	2- 4, 6- 10,12- 13, 16- 19	YES
	Claims	1,5,11,14- 15	NO
Inventive Step	Claims	2- 4, 6- 10, 12- 13,16- 19	YES
	Claims	1,5,11,14,15	NO
Industrial Applicability	Claims	1- 19	YES
	Claims		NO

**2. Citations and Explanations**

**The following documents (D) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:**

**D1: FEBS Letters 276 (1- 2), pages 151- 155 (1990);**

**D2: WO- A- 9529193 (The Government of USA);**

**D3: EP- A- 668530 (Åkzo Nobel NV).**

\*\*\*\*\*

1) D1 (see page 153, 16th peptide) discloses a peptide which contains "at least part of the amino acid sequence of SEQ. No.1 ID", wherein the amino acid in the position equivalent to the position 2 of the above- mentioned peptide (Thr) has been replaced by an alpha- glutamyl residue. Therefore claim 1 is objected to under Art. 33 (2) PCT, as its subject matter is not new. Dependent claims 5, 11, 14- 15, characterized only by trivial features, are similarly objected to under Art. 33(2) PCT because they are not new. Claims 2- 4, 6- 10,12- 13 and 16- 19 are considered to be new under Art. 33(2) PCT.

2) The examination of the inventive step will concern only claims the unobjected claims 2- 4, 6- 10, 12- 13 and 16- 19.

D2 and D3 disclose the most relevant prior art for these claims.

They disclose peptides from melanoma- associated polypeptides, which can be used as vaccines or in diagnostics.

The essential difference between the peptides of the prior art and these disclosed in the

present application resides essentially in the structure. Even though the peptides of claims 2- 4 exhibit a marked similarity with the peptides of the above- mentioned documents, they are different in that they contain the residues Thr in position 2 and Gln in position 8, whereas the peptides of the present application exhibit at least a substitution in one of these positions. The subjective problem underlying the present application is defined by the applicant as to provide peptides from melanoma- associated proteins with enhanced immunogenicity (page 3, lines 5- 13).

The applicant has provided comparative tests (see Figures and Tables) which demonstrate that the peptides containing a modification in position 2 or/and 8 can act in equivalent or better way in appropriate biological tests. Therefore the objective problem is maintained to be equivalent to the subjective one as stated by the applicant and the compounds of claims 2- 4 solve it. This warrants the acknowledgment of an inventive activity under Art. 33(3) PCT for claims 2- 4 and dependent claims 6- 10, 12- 13 and 16- 19, drawn to a vaccine based on these peptides and other applications of these, cells being able to interact with them, antibodies against them and method based on them.

3) Claims 1- 19 are endowed with industrial applicability under Art. 33(4) PCT.



**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1 and 4 are objected to as being unclear under Art. 6 PCT and Rule 6 PCT. In fact "at least part of the amino acid sequence of SEQ. ID. No. 1" could even be one or two amino acids, and this implies a frankly unreasonable scope for these claims.

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>T/96209 WO</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/EP 97/ 03712</b>	International filing date (day/month/year) <b>08/07/1997</b>	(Earliest) Priority Date (day/month/year) <b>11/07/1996</b>
Applicant <b>AKZO NOBEL N.V. et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (see Box I).

2. ☐ Unity of invention is lacking (see Box II).

3. ☒ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing

☒ filed with the international application.

☐ furnished by the applicant separately from the international application,

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ Transcribed by this Authority

4. With regard to the title, ☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is:

Figure No.            ☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 97/03712

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/11 C07K14/705 C07K14/47 A61K39/00 C07K16/30  
 A61K51/08 G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C12N C07K A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 668 350 A (AKZO NOBEL NV) 23 August 1995 see the whole document ---	1-10
X	WO 95 29193 A (THE GOVERNMENT OF USA) 2 November 1995 see the whole document ---	1-10
X	T KRISTENSEN ET AL.: "Evidence that the newly cloned low-density-lipoprotein receptor related protein is the alpha-2 macroglobulin receptor" FEBS LETTERS, vol. 276, no. 1,2, December 1990, AMSTERDAM NL, pages 151-155, XP002024078 *peptide 16 on page 153* --- -/-	1-4



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier document but published on or after the international filing date  
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other means  
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

28 October 1997

Date of mailing of the international search report

11. 11. 97

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Masturzo, P

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	L RIVOLTINI ET AL.: "Binding and presentation of peptides derived from melanoma antigens MART-1 and glycoprotein-100 HLA-A2 subtypes" JOURNAL OF IMMUNOLOGY, vol. 156, no. 10, 15 May 1996, BALTIMORE US, pages 3882-3891, XP002024079 see the whole document ---	1-10
P,X	M L SALGALLER ET AL.: "Immunization against epitopes in the human melanoma gp100 following patient immunization with synthetic peptides" CANCER RESEARCH, vol. 56, no. 20, 15 October 1996, MD US, pages 4749-4757, XP002024080 see the whole document -----	1-10

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 97/03712

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 668350 A	23-08-95	AU 1227295 A	24-08-95
		CA 2142575 A	17-08-95
		FI 950665 A	17-08-95
		JP 7278193 A	24-10-95
		ZA 9501239 A	19-10-95
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WO 9529193 A	02-11-95	AU 2395895 A	16-11-95
		CA 2188432 A	02-11-95
		EP 0756604 A	05-02-97
		FI 964235 A	20-12-96
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